



The Garden's Most Wanted

Year levels 4–5

Curriculum Links

Science

- living things, including plants and animals, depend on each other and the environment to survive (ACSSU073)
- living things have structural features and adaptations that help them to survive in their environment (ACSSU043)
- with guidance, identify questions in familiar contexts that can be investigated scientifically and predict what might happen based on prior knowledge (ACSIS064).

Resources

- workbooks
- digital cameras (optional)
- copies of the information sheet (on the following page)
- the Garden Specialist and volunteers

Location

The garden and classroom

Suggested duration:
60 minutes

In the garden

- Students visit the kitchen garden and list the creatures they find. They can also take photos or draw pictures. The class list might include snails, caterpillars, wattle birds, slugs, aphids, ladybirds, magpies, moths, lizards, praying mantis and fruit flies.

In the classroom

- In pairs or in small groups, students classify the list of creatures according to whether they eat plants or animals. These classifications can be refined according to whether the creatures are harmful to the plants, or helpful. Some creatures might exist in both categories; for example, caterpillars do considerable damage to plants but adult butterflies are excellent pollinators.
- Carnivorous animals are among the most beneficial to plants because they feed on plant-eaters. Lizards, ducks, magpies, ladybirds and praying mantis are among a gardener's best friends.
- The class makes a list of the Garden's Most Wanted: the creatures who do the most harm to the kitchen garden. The Garden Specialist and volunteers can assist in making the list.
- Discuss that one way of controlling pests is to use commercial insecticides that contain toxic combinations of chemicals. These are usually very effective in killing pests, but are not always a good idea in the kitchen garden.
- Students suggest reasons why toxic insecticides might not be suitable. Answers include: insecticides kill both harmful and helpful creatures; toxins are consumed by helpful predators when they eat pests that have been sprayed with insecticide; toxins can remain in the soil for months, rendering fruits and vegetables harmful to people. In short, insecticides introduce poisons into the garden that can do more harm than good.

Pest patrol

- Students form groups to target a specific pest species, such as snails. Each group suggests two strategies for controlling their pest. The accompanying information sheet can assist, and the Garden Specialist and volunteers may provide insight.
- Each group makes a list of the ingredients and resources they need in order to implement their strategy. To minimise expenditure, agreement between groups might be required to determine which sprays will be used.

Following up

- The teacher, Garden Specialist, volunteers and children prepare sprays. Children bring along additional resources such as egg shells, coffee grounds or soap flakes, as required.
- Students will implement their plans in Lesson 6.

Extension / Variation

- At this point, you might want to introduce the concept of control groups and fair testing. Have students plan their pest control strategies and discuss the benefit of leaving a group of plants untreated (so that data collected can be compared). In Lesson 6, students will implement their plans but the class will designate a control group.

Assessment



Students' achievement of the objectives will be evident through:

- the suitability (or otherwise) of the pest control strategies they identify
- individual participation and interaction in their group.

Related resource

Stephanie Alexander's *Kitchen Garden Companion* provides comprehensive information about organic ways to control garden pests (See pages 731–734).

The Garden's MOST WANTED

Garden pest Ways to control garden pests

Aphids	<ul style="list-style-type: none"> • Introduce predators such as ladybirds. • Spray plants with homemade white oil: 4 parts sunflower oil; one part dishwashing liquid. Dilute one tablespoon of mixture in 4 L of water. • Use garlic spray: chop 100 g of garlic and cover with vegetable oil. After several hours, strain and add one litre of soapy water. Dilute 100 mL of mixture with one litre of water. • Use soap spray: 3 tablespoons of soap flakes dissolved in 4 L of water. • Use chilli spray: 6 small red chillies; one litre of water; one tablespoon of soap flakes.
Caterpillars	<ul style="list-style-type: none"> • Remove by hand. • Sprinkle pepper on wet leaves of plants. • Spray plants with garlic spray (see recipe, above).
Mealybugs	<ul style="list-style-type: none"> • Spray plants with homemade white oil (see recipe, above). • Dab bugs with cotton buds soaked in methylated spirits.
Snails and slugs	<ul style="list-style-type: none"> • Remove by hand. • Use a coffee spray on plants: one part black coffee (i.e. an espresso) to 3 parts water. • Set beer baits: half a bottle of beer laid on its side. • Surround plants with egg shells.
Thrips	<ul style="list-style-type: none"> • Spray water under the leaves of plants. • Use pyrethrum spray: 1/2 cup of dried pyrethrum flowers; one litre of boiling water. Add one teaspoon of soap flakes when the solution has cooled. • Use garlic spray (see recipe, above).

Warning!

- Only use sprays in the early morning or evening. Spraying on warm days can burn plants.
- Avoid contact between your skin and the sprays. It is best to wear gloves and goggles when spraying.
- Pyrethrum kills many creatures, including helpful insects like bees and butterflies. Its fumes are toxic when being prepared.



Questions to consider:

- How will we know if our treatment has reduced the number of this specific pest?
- What will we look for? When will we look?
- What notes or observations will we write down? Why?
- Is there anything else we need to consider?